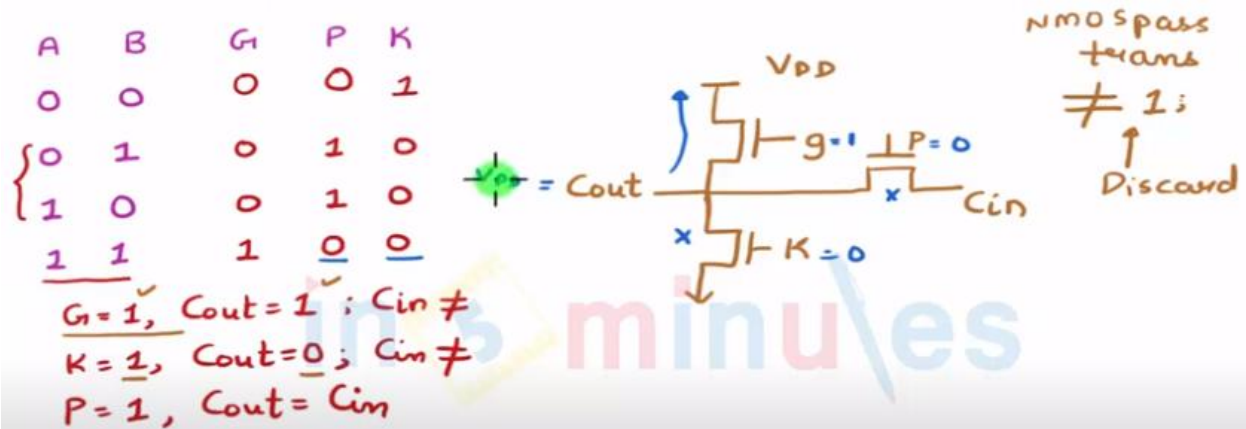
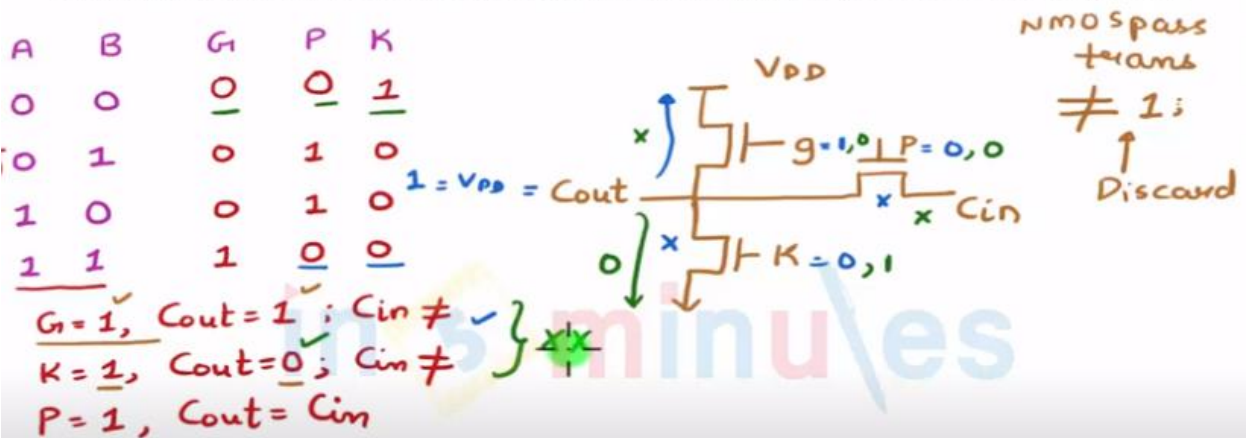


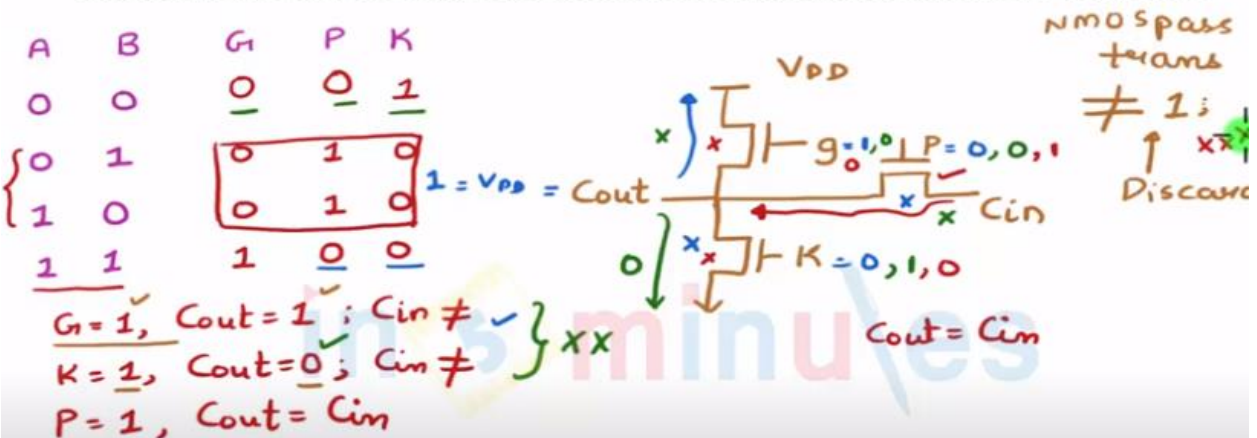
Switching Network for the carry-out equation / Basic principle for Manchester Carry Adder



Switching Network for the carry-out equation / Basic principle for Manchester Carry Adder

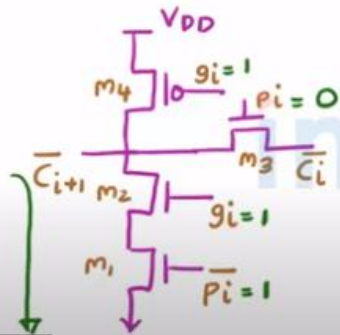


Switching Network for the carry-out equation / Basic principle for Manchester Carry Adder



Static Manchester Carry Adder

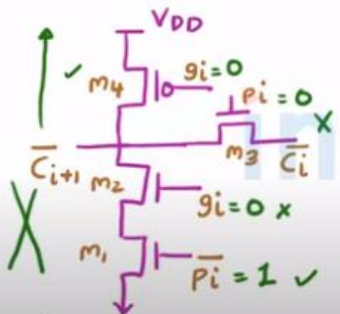
A	B	G	P	K
0	0	0	0	1
0	1	0	1	0
1	0	0	1	0
1	1	1	0	0



Case 1 ;
 $g_i = 1, K_i, p_i = 0 ; C_{out} = 1 \checkmark$
 m_4, m_3 OFF
 m_2, m_1 ON
 $\bar{C}_{i+1} = 0$
 $\therefore \boxed{C_{i+1} = 1}$
 $C_{out} = 1 \checkmark$

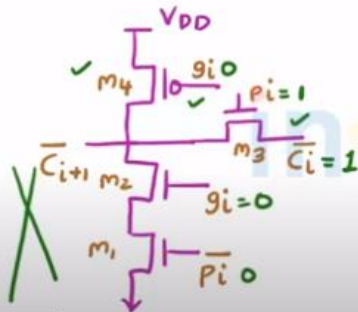
Static Manchester Carry Adder

A	B	G	P	K
0	0	0	1	0
0	1	0	1	0
1	0	1	0	0



Case 2:
 $K_i = 1, \check{g}_i, \check{p}_i = 0 ; C_{out} = 0 \checkmark$
 m_3, m_2 OFF ; m_1 ON (No path)
 m_4 ON
 $\bar{C}_{i+1} = V_{DD}$
 $\therefore C_{i+1} = 0 = C_{out}$

A	B	G	P	K
0	0	0	1	0
0	0	0	1	0
1	1	1	0	0



Play (k)

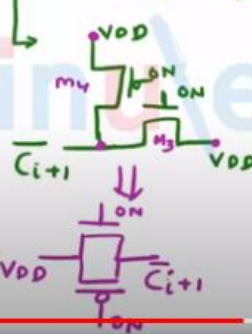
Case 3:

$$p_i = 1, \quad g_i = 0, \quad K_i = 0;$$

$$C_{out} = C_{in}$$

(M_1, M_2) OFF

$C_{in} = 0$
 M_4 ON, M_3 ON

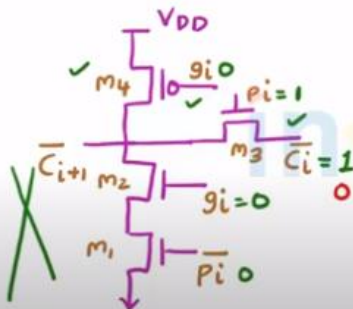


$$\bar{C}_{i+1} = V_{DD}$$

$$C_{i+1} = 0$$

Static Manchester Carry Adder

A	B	G	P	K
0	0	0	1	0
0	0	0	1	0
1	1	1	0	0



Play (k)

Case 3:

$$p_i = 1, \quad g_i = 0, \quad K_i = 0;$$

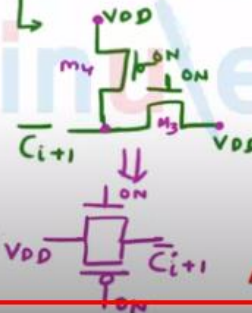
$$C_{out} = C_{in}$$

(M_1, M_2) OFF

$C_{in} = 0$
 M_4 ON, M_3 ON

$C_{in} = 1$ ✓

M_3 ON, M_4 ON



$$\bar{C}_{i+1} = V_{DD}$$

$$C_{i+1} = 0$$

